

REMARKS

By this amendment, Claims 45-46 and 53-54 have been amended without acquiescence to the position of the Office Action or prejudice to pursue the claims, as previously recited, in a continuation application. No claims have been cancelled or added. Hence, Claims 45-60 are pending in the application.

SUMMARY OF REJECTIONS

Claims 45, 46, 48, 52-54, 56, and 60 have been rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over U.S. Patent Number 6,463,457 issued to Gamache et al. ("*Gamache*") in view of U.S. Patent Number 6,463,457 issued to Armentrout ("*Armentrout*"). Claims 47, 49-51, 55, and 57-59 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Gamache* in view of *Armentrout* in view of U.S. Patent Number 6,804,711 issued to Dugan et al. ("*Dugan*").

The rejections are respectfully traversed.

THE PENDING CLAIMS ARE PATENTABLE OVER THE CITED ART

Even if the cited references were to be properly combined, each of Claims 45-60 recite a combination of elements that is not disclosed, taught, or suggested by the cited art, taken individually or in combination. However, as explained below, the cited references have not been properly combined; thus, the rejection of the pending claims under 35 U.S.C. § 103(a) may not be properly maintained.

Claim 45

Claim 45 recites the following features:

"A machine-implemented method, comprising the steps of:

a service requestor using an Internet Protocol (IP) address to address requests to a service provided by a first node within a cluster, wherein said first node is configured to provide said service to requests address to said IP address;

in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests address to said IP address;

after said first node becomes unavailable, the service requestor using said IP address to address a message to said cluster related to said service; and
in response to said message, said second node of the cluster sending a response that indicates an error condition.” (emphasis added).

At least the above-underlined features are not disclosed, taught, or suggested by *Gamache* and *Armentrout*, either individually or in combination.

The method of Claim 45 is directed towards an approach for providing service to a service requestor in a manner that avoids the service requestor waiting for a time-out when a node providing the service fails. A service requestor using an Internet Protocol (IP) address to address requests to a service provided by a first node within a cluster. The first node is configured to provide the service to requests addressed to the IP address. In response to the first node becoming unavailable, a second node is automatically configured to respond to requests addressed to the IP address. After the first node becomes unavailable, the service requestor uses the IP address to address a message to the cluster related to the service. In response to the message, the second node sends a response indicating an error condition.

The method of Claim 45 exhibits numerous advantages. For example, following the approach of Claim 45, a service requestor accessing a service on a first node using an Internet Protocol (IP) address may immediately receive an indication (such as, for example, a TCP/IP error message) that the service is unavailable when the first node becomes unavailable. Advantageously, the service requestor may perform another action (such as attempting to access the service on another node using a different IP address) faster than if the service requestor had to wait for a time-out to determine that the first node was unavailable. Other advantages and embodiments are described in further detail in the Applicants' patent application.

In sharp contrast, *Gamache* is directed towards forming and operating a cluster from a group of available nodes. *Gamache* discusses several requirements that must be satisfied for a cluster to be formed, e.g., one node of the cluster must possess a majority of the replica members to ensure only one unique incarnation of a cluster can exist at a time (Abstract; Col. 2, lines 11-34). Importantly, while *Gamache* briefly mentions (in

Col. 20, lines 10-12) that a cluster of *Gamache* may become unavailable, *Gamache* does not teach an approach for communicating, to a service requestor, that a particular node of a cluster is unavailable when that node becomes unavailable. In view of the fundamental differences between the pending claims and *Gamache*, *Gamache* does not teach numerous claim elements. Indeed, the Office Action acknowledges that *Gamache* “does not teach the use of responses requests and messages and the recognition of error conditions.”

Armentrout is directed towards a platform that uses the idle computational processing power of a plurality of provider computers. A server collects tasks from client computers, schedules and distributes the tasks to provider computers, and collects and returns results to client computers. Similarly, *Armentrout* does not teach an approach for communicating, to a service requestor, that a particular node of a cluster is unavailable when that node becomes unavailable.

As stated in MPEP § 2143.03: “To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” *In Re Royka*, 180 USPQ 580. To support an obviousness rejection, the Applicant would expect an argument that has the following form: (1) element X is shown in reference A, (2) element Y is shown in reference B, and (3) there is some actual suggestion to combine the references A and B to create the mechanism or technique that has both elements X and Y.

However, the Office Action does not support the obviousness rejections in that manner. Rather, to support the obviousness rejections, not only has each claim been divided into its constituent elements, but also each constituent element of the claim has been finely dissected into a set of short phrases and sentence fragments. The Office Actions then point out how each individual fragment corresponds to a similar fragment in a cited reference. The fragment-to-prior-art correlation appears to have been made without any consideration as to the relationship between the fragments, the meaning of the elements as a whole, and the meaning of the claim as a whole.

It is respectfully submitted that a claim may not be properly rejected simply because each word or phrase in the claim appears in a prior art reference, without regard to what meaning is ascribed to the word or phrase given its placement in the claim.

In view of the fundamental differences between the teachings of the cited references and the requirements of Claim 45, numerous elements of Claim 45 are not disclosed, taught, or suggested by the cited art. To illustrate, Claim 45 features the element of “in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests addressed to said IP address.” With respect to this element, the Office Action states that:

- “in response to said first node becoming unavailable” is shown by *Gamache* at Col. 9, lines 56-58 and Col. 20, lines 10-12, which states, *in toto*:

To create a new cluster, a system administrator runs a cluster installation utility on a system (node) that then becomes a first member of the cluster 59....For example, three replica members may be available for ordinary reliability, in which two disks will have to fail to render the cluster unavailable.

- “automatically configuring a second node of the cluster” is shown by *Gamache* at Col. 9, lines 25-27, Col. 9, lines 62-64, and Col. 9, lines 2-4, which states, *in toto*:

To automatically failback, groups require a defined preferred owner...The administrator then configures any resources that are to be managed by the cluster software, possibly including other storage devices...If the failover manager 80 takes the resource offline, the group is restarted on another node in the cluster 59, known as pushing the group to another node.

- “to respond to requests” is shown by *Armentrout* at Col. 22, 55-56, which states, *in toto*:

Requests the status of a particular task. The server will send a TaskStatus message in response.

- “addressed to said IP address” is shown by *Gamache* at Col. 5, lines 39-43, which states, *in toto*:

For example, a group may include an application that depends on a network name, which in turn depends on an Internet Protocol (IP) address, all of which of collected in a single group.

The above portions of the cited references may discuss words or phrases of this element, but the cited portions have no relation to each other, and collectively they fail to

disclose, teach, or suggest this element in its entirety. Specifically, *Gamache* fails to disclose, teach, or suggest the element of “in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests addressed to said IP address” because, *inter alia*:

- (1) The Office Action acknowledges that *Gamache* “does not teach the use of responses requests and messages and the recognition of error conditions.”
- (2) The portion of *Gamache* cited to show “in response to said first node becoming unavailable” does not disclose, teach, or suggest automatically configuring a second node of a cluster to respond to requests addressed to the IP address, where a first node is configured to provide the service to requests address to the IP address. Moreover, while this portion mentions that a cluster may become unavailable, there is nothing in the cited portion of *Gamache* that suggests a node of the cluster becoming unavailable; consequently, this cited portion of *Gamache* fails to show the claim fragment of “in response to said first node becoming unavailable,” let alone the element of “in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests associated with said IP address.”
- (3) The portion of *Gamache* cited to show “automatically configuring a second node of the cluster” does not disclose, teach, or suggest the features of “in response to said first node becoming unavailable, automatically configuring a second node of a cluster to respond to requests addressed to the IP address used by a service requestor to access a service provided by the first node.” Thus, the actions performed in these cited portions are not performed in response to a first node, as claimed, becoming unavailable.
- (4) The portion of *Gamache* cited to show “addressed to said IP address” does not disclosure, teach, or suggest automatically configuring a second node of a cluster to respond to requests addressed to an IP address, used by a service requestor to address requests to a service provided by the first node, in response to said first node becoming unavailable. Instead, this cited portion

discusses that an application may depend on a network name, which may depend on an IP address. However, this teaching lacks a suggestion of (a) performing any action in response to said first node, as claimed, becoming unavailable, and (b) automatically configuring a second node of a cluster to respond to requests addressed to the IP address as claimed.

Similarly, *Armentrout* is only cited to show “to respond to requests.” *Armentrout* does not contain any portion that suggests, “in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests addressed to said IP address.” Instead, *Armentrout* discusses responding to a request in an entirely different context. However, a server that sends the TaskStatus message of *Armentrout* does not have anything to do with this claimed element.

Importantly, if one were to combine the teachings of *Gamache* and *Armentrout*, the resulting combination would not look anything like the features of Claim 45. Specifically, since no portion of *Gamache* or *Armentrout* performs the step of “in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests addressed to said IP address,” a combination of *Gamache* or *Armentrout* would correspondingly not perform the step of “in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests addressed to said IP address.” The mere fact that certain portions of *Gamache* or *Armentrout* use words or phrases that are featured in this element is not, in and of itself, enough for *Gamache* or *Armentrout* to discuss or suggest the subject matter of this element when read in its entirety.

Consequently, for at least the above reasons, it is respectfully submitted that the element of “in response to said first node becoming unavailable, automatically configuring a second node of the cluster to respond to requests associated with said IP address” featured in Claim 45 is not disclosed, taught, or suggested by *Gamache* or *Armentrout*, either individually or in combination.

Claim 45 also features the element of “after said first node becomes unavailable, the service requestor using said IP address to address a message to said cluster related to said service.” Neither *Gamache* nor *Armentrout* suggest the performance of this element.

The Office Action cites numerous portions of *Gamache*, which are completely unrelated to each other, to show the subject matter of this element. The cited portions of *Gamache* (Col. 9, lines 56-58, Col. 20, lines 10-12, Col. 7, lines 30-32, Col. 5, lines 39-43, Col. 5, lines 62-67, and Col. 6, lines 1-2) cited to show this element state, *in toto*:

To create a new cluster, a system administrator runs a cluster installation utility on a system (node) that then becomes a first member of the cluster 59...For example, three replica members may be available for ordinary reliability, in which two disks will have to fail to render the cluster unavailable...With GLUP, a node (e.g., 60₂) wishing to send an update to other nodes first sends a request to the locker node 60₁...For example, a group may include an application that depends on a network name, which in turn depends on an Internet Protocol (IP) address, all of which are collected in a single group...The communications manager 72 sends periodic messages, called heartbeats, to counterpart components on the other nodes of the cluster 59 to provide a mechanism for detecting that the communications path is good and that the other nodes are operational. Through the communications manager 72, the cluster server 66 is essentially in constant communications with the other nodes 60₁ – 60_n of the cluster 59.

The above cited portions of *Gamache* lack any teaching of a service requestor that uses the same IP address, previously used by the service requestor to address requests to a service provided by a first node of a cluster, to address a message to the cluster related to the same service after the first node becomes unavailable. Instead, the cited portions state, *inter alia*, (a) two disks will have to fail to render a cluster unavailable, (b) an application depends on a network name that depends on an Internet Protocol (IP) address, and (c) heartbeat messages may be used to detect that nodes are operational; however, these concepts do not suggest “after said first node becomes unavailable, the service requestor using said IP address to address a message to said cluster related to said service” as featured in Claim 45. As a result, it is respectfully submitted that *Gamache* cannot disclose, teach, or suggest this element.

Claim 45 also features the element of “in response to said message, said second node of the cluster sending a response that indicates an error condition.” Neither *Gamache* nor *Armentrout* suggest the performance of this element. The Office Action acknowledges that *Gamache* “does not teach the user of responses requests and messages and the recognition of error conditions.” Despite this acknowledgement of the

shortcoming of *Gamache*'s teachings, the Office Action relies upon *Gamache* to show the fragment of "said second node of the cluster," and relies upon *Armentrout* (Col. 23, lines 64-67, Col. 17, lines 62-64, and Col. 24, line 2) to show the remainder of this element.

However, the cited portions of *Armentrout* lack (a) any suggestion that the second node of the cluster, as claimed, is performing any actions, and (b) any suggestion of sending a response that indicates an error condition in response to a message sent to the cluster by the service requestor. Instead, the cited portions of *Armentrout* state, *in toto*:

Task: The provider sends the task message out in response to a GetTask message from the provider. In this case, the Task message is a checkpoint of the state of the identified task...Further, the provider servlet 56 returns responses from the provider manager to the various provider [sic] over the network 28...Report an error condition.

Nothing in the cited portions of *Armentrout* discusses a second node of the cluster, as claimed, sending a response that indicates an error message in response to a message, as claimed. Further, nothing in the cited portion of *Gamache* discloses, teaches, or suggests a second node of the cluster, as claimed. Consequently, even if *Gamache* and *Armentrout* were to be combined, the resulting combination would still fail to disclose, teach, or suggest the element of "in response to said message, said second node of the cluster sending a response that indicates an error condition" featured in Claim 45.

As at least one element of Claim 45 is not disclosed, taught, or suggested by the cited art, either individually or in combination, it is respectfully submitted that Claims 45 is patentable over the cited art and is in condition for allowance.

Moreover, *Gamache* and *Armentrout* have not been properly combined. The Office Action states:

It would have been obvious to one of ordinary skill at the time of the invention to combine *Armentrout* with *Gamache* to provide responses to requests and messages in order to use standard communication protocol between members of a network and to promote user acceptance of the system. Likewise, it would have been obvious to one of ordinary skill at the time of the invention to combine *Armentrout* with *Gamache* to detect error conditions and to permit appropriate action to be taken to correct the problem or take another corrective action and thus provide a more stable system. *Gamache* and *Armentrout* teach the user of related systems. They teach the use of computers, the use of databases, the use of networks, the use of nodes, the use of clusters, the use of services, the use of resources,

the use of applications, the monitoring of status, the use of paths, and the detection of failures.

However, notwithstanding the fact that neither *Gamache* nor *Armentrout* disclose numerous elements of Claim 45, the Applicants respectfully submit that there is nothing in either *Gamache* or *Armentrout* that teaches or suggests combining their respective teachings.

As stated in the Federal Circuit decision *In re Dembiczak*, 50 USPQ.2d 1617 (Fed. Cir. 1999), (citing *Gore v. Garlock*, 220 USPQ 303, 313 (Fed. Cir. 1983)), “it is very easy to fall victim to the insidious effect of the hindsight syndrome where that which only the inventor taught is used against its teacher.” *Id.* The Federal Circuit stated in *Dembiczak* “that the best defense against subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or suggestion to combine prior art references.” *Id.* Thus, the Federal Circuit explains that a proper obviousness analysis requires “**particular factual findings** regarding the locus of the suggestion, teaching, or motivation to combine prior art references.” *Id.* (emphasis added).

In particular, the Federal Circuit states:

“We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved...although ‘the suggestion more often comes from the teachings of the pertinent references’...The range of sources available, however, does **not diminish the requirement for actual evidence**. That is, the **showing must be clear and particular**...Broad conclusory statements regarding the teaching of multiple references, standing alone, are not ‘evidence.’” *Id.* (emphasis added; internal citations omitted).

Neither *Gamache* nor *Armentrout* show any suggestion, teaching, or motivation to combine their teachings, nor does the Office Action provide a “clear and particular” showing of the suggestion, teaching, or motivation to combine their teachings. Both *Gamache* and *Armentrout* are directed towards drastically different subject matter, namely providing consistent cluster operation data and utilizing idle computational processing power. The Office Actions unsupported assertion that the references both use “resources,” “nodes,” “computers,” “databases,” “networks,” “clusters,” “services,”

“applications,” “monitoring of status,” “paths,” and “the detection of failures” does not provide a motivation for combination, as these features are so common, any reference may be said to be combined with another reference in this fashion based on a key word search of nouns which both references recite therein, irrespective of the teachings of the references. The assertion also directly contradicts the Office Actions earlier statement that “*Gamache* does not teach...the recognition of error conditions.”

No portion of any reference is cited by the Office Action to provide a motivation for combination of the references. In fact, the only motivation provided in the Office Action is the hindsight observation that by combining features of those references, one may achieve the benefits achieved from the invention as described and claimed in the application. It is respectfully submitted that such a hindsight observation is not consistent with the Federal Circuit’s requirement for “particular factual findings.”

Claims 46-60

Claim 53 recites features similar to those recited in Claim 45, except that Claim 53 is recited in machine-readable medium form. Consequently, Claim 53 is patentable over the cited art and is in condition for allowance for at least the reasons given above with respect to Claim 45.

Claims 46-52 and 54-60 are dependent claims, each of which depends (directly or indirectly) on one of the claims discussed above. Each of Claims 46-52 and 54-60 is therefore allowable for the reasons given above for the claim on which it depends. In addition, each of Claims 46-52 and 54-60 introduces one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time, although the Applicants reserve the right to further point out the differences between the cited art and the novel features recited in the dependent claims.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any fee shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

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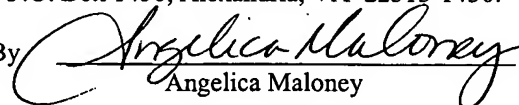
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On August 17, 2005

By


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